vations over a long period, and outcome in people with type 2 diabetes treated with insulin. **METHODS:** Data were extracted from GPRD. An index of glucose variability was generated using RBG observations over a sustained period (≤10 years from insulin initiation) in subjects with ≥5 RBG observations using the difference between the maximum and minimum RBG observation ($\Delta_{Max\text{-}Min}$RBG). Cox proportional hazards models were developed characterising time to first events for: acute myocardial infarction (AMI), stroke, and severe visual loss, as well as for all-cause mortality. Recognised vascular disease risk factors were accounted for. **RESULTS:** There were 4238 subjects who met the inclusion criteria. The subjects excluded were found to be more poorly than those included, with shorter follow up and a greater likelihood of having ever smoked. There was an association between $\Delta_{Max\text{-}Min}$RBG and HbA1c whereby subjects with good control were more like to have low variability. Following standardisation for potentially confounding factors, $\Delta_{Max\text{-}Min}$RBG (m.mol/l) was associated with all-cause mortality (hazard ratio [HR] = 1.026 per m.mol/l glucose; p = 0.020); stroke (HR = 1.046; p < 0.001), and severe visual loss/blindness (HR = 1.040; p = 0.025). For these three endpoints, $\Delta_{Max\text{-}Min}$RBG was a better predictor of outcome than was HbA1c, whereas in AMI, ΔMax-Min RBG was not significant, and HbA1c was (poor control versus good control: HR = 1.53; p = 0.034). **CONCLUSION:** Although we were unsure why general practitioners were recording RBG observations, glucose variability over a sustained period, as measured by $\Delta_{Max\text{-}Min}$RBG, was strongly associated with all-cause mortality, stroke and vision loss in people with type 2 diabetes treated with insulin, and more so than was mean HbA1c over the same extended period.

PDB9

INDIRECT COMPARISON OF ONCE DAILY INSULIN DETEMIR AND GLARGINE IN REDUCING WEIGHT GAIN AND ACHIEVING GLYCEMIC CONTROL, WHEN ADMINISTERED IN ADDITION TO CONVENTIONAL ORAL ANTIDIABETIC THERAPY IN THE TREATMENT OF TYPE 2 DIABETES PATIENTS; A META-ANALYSIS

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OBJECTIVES: Basal insulin administered to type 2 diabetes patients with poor glycemic control, when managed with oral therapy alone, can lead to an increased risk of weight gain and hypoglycemia. A meta-analysis of randomized controlled trials (RCTs) using treat-to-target protocols was conducted to indirectly compare insulin detemir with insulin glargine on the following outcomes: weight gain, hypoglycemic episodes, and HbA1c. **METHODS:** Parallel-group RCTs of at least 20 weeks duration that compared once-daily glargine or detemir with a common comparator, NPH insulin (bedtime), in insulin-naïve, poorly controlled type 2 diabetes patients receiving oral therapy, were selected. Five open-label trials were identified (N = 2551 patients; N = 1 detemir and N = 4 glargine trials). A fixed-effects meta-analysis was used, with an indirect comparison of glargine (N = 2047 patients) and detemir trials (N = 504 patients) carried out using meta-regression. Weight gain and mean HbA1c change from baseline were analyzed as weighted mean differences (WMD). Mean Hba1c level at study endpoint was analyzed as standardized mean differences (SMD), and total hypoglycemic episodes per study were analyzed as odds-ratios (OR). Further analyses were conducted which adjusted for covariates. Dosing formulas were comparable across studies. **RESULTS:** Patients receiving evening detemir gained significantly less weight (unadjusted WMD –1.22, 95% CI –2.15, –0.29; p = 0.010) and had a significantly lower total number of hypoglycemic episodes versus evening glargine (unadjusted OR 0.52, 95% CI 0.28, 0.98; p = 0.044). Mean change from baseline in HbA1c level favored evening glargine, but there was no significant difference between treatments for mean HbA1c level at study endpoint (unadjusted SMD 0.09, 95% CI –0.16, 0.33; p = 0.480). **CONCLUSION:** Detemir appears similar to glargine in terms of achieving glycemic control, but is superior to the latter for controlling weight gain and reducing the incidence of hypoglycemic episodes in this population.

PDB10

UNDERSTANDING INSULIN THERAPY INITIATION FROM A PRIMARY CARE PERSPECTIVE IN THE UNITED KINGDOM USING LOCAL DATA

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OBJECTIVES: In the UK, the role of insulin initiation has traditionally been one for specialist (secondary care) diabetes teams (SDT) but this trend is changing. The increasing role of primary care (PC) in diabetes management highlights the need for appropriate resource planning. This analysis describes the initial findings of a UK primary care audit of patients who were newly initiated on insulin. **METHODS:** Data were collected from 8 primary care practices in the UK, covering a total of 58,452 people. Medical records were reviewed to ascertain the prevalence of type 2 diabetes mellitus (T2DM), those who initiated insulin in the last 3 years and associated patient and treatment details. **RESULTS:** A total of 2005 patients (3.4%) had a diagnosis of T2DM. Insulin was initiated in 316 patients with a mean age at initiation of 63 years and duration of illness of 8 years. Of these 149 had been initiated in the last three years (62% PC, 28% SDT) leading to an estimate of annual insulin initiations of 2.19% of all people with type 2 diabetes. The mean HbA1c closest to insulin initiation was similar for PC (10.6%) and SDT (10.4%) patients and 54% patients had BMI ≥ 30 kg/m^2. Patients commonly initiate insulin following two or more oral medications (57%), the most common being metformin plus a sulphonylurea. Pre-mixed insulins and long acting insulin analogues were common, although use differed between PC (59% long acting insulin analogues) and SDT (49% pre-mixed insulin). **CONCLUSION:** In the UK, around 2% of people with T2DM will be initiated on insulin annually. The majority of these are initiated within a primary care setting and with HbA1c levels which are above international clinical targets. Given the trend to manage more diabetes in primary care, appropriate resources need to be available to support patients through this intensification of therapy.

PDB11

ASSOCIATION BETWEEN TOPICAL CORTICOSTEROID USE AND DIABETES ONSET

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OBJECTIVES: To confirm or refute a possible association between intense Topical Corticosteroid (TC) use and new-onset diabetes and establish whether it increases with dose and duration of TC use. **METHODS:** Data for this nested case-control

study were obtained from the PHARMO Record Linkage System, including among others linked drug-dispensing and hospital records of approximately three million individuals in defined areas of The Netherlands. Users of TC during 1992–2004, without diabetes, with ≥4 years of follow-up were selected. Diabetes onset was defined as first occurrence (index date) of an antidiabetic drug dispensing or hospitalization for diabetes or diabetes-related diagnoses. Each case was matched by age and sex to 4 controls without diabetes, with similar follow-up duration. Use of TC and systemic corticosteroids (SC) and/or inhaled corticosteroids (IC) as co medication were classified as current (≤2 years before index date), recent (4–2 years ago) and past/never (>4 years ago). Multivariate regression adjusted for co-medication and co-morbidity. **RESULTS:** Among 192,893 incident TC users, 2,212 developed diabetes and could be matched to 8,582 controls. Current TC use was associated with a 1.24 times increased risk of diabetes (95% CI 1.11–1.40). The Odds Ratio increased to 1.32 with >180 days of TC use and to 1.44 with a cumulative TC load (combined potency and units) 731–1,460 mg. Cases more often used SC and IC than controls (23% versus 17% and 18% versus 13% respectively). Among "Past/never" users of SC and/or IC, risk of diabetes with current TC use was 1.25 (95% CI 1.09–1.43); among "Current" users of SC and/or IC, this OR was 1.13 (95%CI 0.88 1.44). **CONCLUSION:** A statistically significant effect of TC use on diabetes was found. Use of TC as skin treatment among patients at increased risk of diabetes should be considered with some caution.

DIABETES—Cost Studies

PDB12

ROSIGLITAZONE IN THE TREATMENT OF PATIENTS WITH TYPE 2 DIABETES: IMPLEMENTATION OF BUDGET IMPACT ANALYSIS SOFTWARE

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OBJECTIVES: To implement a flexible PC program to support decision makers in evaluating the impact of the use of rosiglitazone in eligible diabetic patients on the Italian National Health System budget. **METHODS:** Rosiglitazone, an insulin-sensitising drug, is indicated for subjects with inadequate glycaemic control both as monotherapy, in those contraindicated to metformin (especially if overweight) and as combination therapy with metformin, sulphonylureas or both. The software developed has a user-friendly interface and is based on an analytic model, which pathway may be summarized as follows: a) estimate of the number of Italian type 2 diabetes patients, grouped according to current therapeutic classes; b) estimate of the number of patients with inadequate glycaemic control for each subgroup; c) identification of patients eligible to rosiglitazone treatment; d) identification of the comparator strategy for each patient sub-group; e) comparison of costs for each couple of alternative options; and f) calculation of budget impact. The user can modify most default data to adapt the analysis to the specific setting. **RESULTS:** Default data based scenario shows that adoption of rosiglitazone monotherapy induces a mild cost increase. Combination treatments induce significant cost savings, related to lower resource consumption for glycaemic auto-monitoring and hypoglycaemia management, as compared to standard combination therapies. The hypothetical scenario in which all eligible Italian patients are treated with rosiglitazone is estimated to induce net savings for about 260 millions Euro per year. **CONCLUSION:** In type 2 diabetes, the maintenance of non-diabetic glycaemic levels has been shown to decrease the onset of long term complications. Rosiglitazone represents a further option to postpone insulin therapy start with a potential cost-saving for the Italian National Heath System.

PDB13

THE COST OF THE INEFFICIENCY IN DIABETES IN HEALTH PRIMARY CARE

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OBJECTIVES: To estimate the economic inefficiency of bad control of Diabetes in terms of direct cost in diabetic patients in a rural area in Spain (Axarquía) during one-year of follow up. **METHODS:** Cohort study of 228 patients (2 rural health centres sampled in 2005–2006). The perspective analysis was National Health System. Total cost is composed of four items: insulin and oral hypoglycaemic agents, glycosylated haemoglobin, disposable and consumable goods (glucose test strips, needles, and syringes) and primary care visits. The statistical analysis was made by the SPSS package. For quantitative: mean, DS, IC95%; for qualitative: proportions. For inferential statistics: Student's T-test for quantitative variables and test of Chi-square for the qualitative ones. Multivariante analysis considered: age, gender, control grade (ADA, 2006) and interaction gender-control of DM. The ratio cost-effectiveness and incremental cost of control compared with non-control of DM was analized with WinBugs controlled for age and gender. **RESULTS:** Sixty-seven percent of females; average age: 69 years. The average of prescribed drugs for DM control was 1.4 drugs/per patient (1.03% acarbose; 32.99% sulphonylurea; 64.43% biguanide, 13.40% metiglinide and the 27.32% insuline). The mean of primary care visits was 14.8/per patient/year. The Diabetes control was 68% (HbA1c% < 7) with 1.34 drugs per year in controlled patients versus 1.61 drugs in non-controlled ($p < 0.01$). The direct health care cost of diabetic patient was €628/year (CI95%: €576–680). In patients non haemoglobin glycosilated controlled the cost was incremented in €193 per patient and the effectiveness decal in 32%. **CONCLUSION:** This economic study demonstrates the real possibility to improve the efficiency of our interventions. If we transferred the data found to our area of reference (Málaga) the saving in costs would be superior to €3 million. Health providers and policymakers should use this information in making clinical and policy decisions in order to use resources efficiently.

PDB14

2-YEAR GLYCEMIC CONTROL FOLLOWING INITIATION OF INSULIN GLARGINE VERSUS NPH INSULIN IN INDIVIDUALS WITH TYPE 2 DIABETES (T2DM)

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OBJECTIVES: To evaluate 2-year real world outcomes of glycemic control in patients with T2DM initiating insulin glargine vs. NPH insulin. **METHODS:** Patients with T2DM (March 2001–March 2005) who failed oral antidiabetic agents, initiated glargine (n = 2105) or NPH (n = 734), with continuous plan enrollment for >18 months (6 months (baseline) prior to and 12 months after insulin initiation) and with available laboratory HbA1C values, were evaluated using a US managed care claims